



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,024	11/21/2003	Matthew G. Thorn	CPCM:0047/FLE/FAR/STA 210	3206
47514 7590 09/13/2007 FLETCHER YODER (CHEVRON PHILLIPS) P. O. BOX 692289 HOUSTON, TX 77069			EXAMINER LEE, RIP A	
			ART UNIT 1713	PAPER NUMBER
			MAIL DATE 09/13/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/720,024		THORN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Rip A. Lee		1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23,25-28 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23,25-28 and 30 is/are allowed.
- 6) ☒ Claim(s) 31 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413).<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

### DETAILED ACTION

This office action follows a response filed on July 2, 2007. Claims 23 and 25-27 were amended, and claims 1-22 and 24 were canceled. Claims 23, 25-28, and 30-32 remain. The indicated allowability of claims 31 and 32 has been withdrawn upon review of prior art.

#### *Claim Rejections - 35 USC § 102 / 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 31 is rejected under 35 U.S.C. 102(e) as being anticipated by Hawley *et al.* (U.S. 6,667,274).

Inventive example 10 Hawley *et al.* discloses a process in which solid organometal compound,  $\text{Me}_2\text{Si}(\text{Ind})_2\text{ZrCl}_2$ , and chlorided zinc-containing alumina is charged into a reactor. In this case, a catalyst is formed consisting essentially of a contact product of metallocene and solid oxide treated with electron withdrawing anion. In a subsequent step, propylene is charged into a reactor, followed by addition of  $\text{Et}_3\text{Al}$  and  $\text{H}_2$ . After one hour, 132.4 g of polypropylene were recovered from the reaction vessel. The process shown in the prior art reads on the process described in the instant claim. Note that the term "process comprising" does not exclude unrecited steps.

Control example 6 also satisfies the requisite features outlined in the instant claim. In this example,  $\text{Me}_2\text{Si}(\text{Ind})_2\text{ZrCl}_2$  is contacted with chlorided zinc-containing alumina. Propylene is bubbled through the mixture, followed by addition of  $\text{Et}_3\text{Al}$ . A sample containing 145 g of polypropylene was recovered.

3. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by McDaniel *et al.* (U.S. 6,107,230).

McDaniel *et al.* discloses the order of addition of polymerization wherein treated solid oxide is charged into a reactor, followed by addition of organometal compound solution. Next, isobutene solvent is added. In the fourth step, organoaluminum is added midway during isobutene addition. Ethylene is then charged into the reactor and polymer is recovered at the end of the reaction (see col. 11, line 60 – col. 12, line 14). It would appear that there is present a contact product of treated solid oxide and organometal compound after these two components are combined. To ensure contact, however, in some embodiments, the organometal and solid oxide were pre-contacted for about 30 mins prior to combination with organoaluminum (col. 12, lines 15-20).

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hawley *et al.* (U.S. 6,667,274).

Hawley *et al.* teaches a catalyst comprising metallocene and solid oxide treated with electron withdrawing anion. A salient feature of preferred embodiments of the invention is that aluminoxanes or fluoro organic borate compounds are not required (col. 13, lines 49-62). However, the inventors indicate that aluminoxanes and fluoro organic borate compounds may be used in other embodiments of the invention. Although there are no examples illustrating such an embodiment, it would have been obvious to one having ordinary skill in the art to make the catalysts described in Hawley *et al.* and include aluminoxanes or fluoro organic borate compounds, and thereby arrive at the subject matter of the instant claims. Since this feature is contemplated by the inventors, one having ordinary skill in the art would have expected such an embodiment to work with a reasonable expectation of success.

*Allowable Subject Matter*

5. Claims 23, 25-28, and 30 are allowed. None of the references cited to date discloses the subject matter of these claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



ral

September 6, 2007